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INFORMATIONAL RELEASE
June 3, 2018

Water Resources' Statement on June 2 Wet Weather Event: Partially Disinfected Release into Lake Champlain - Known Risk to Human Health Minimal

Our priorities are stewarding Burlington's natural assets and infrastructure, protecting public health and providing accurate, transparent and timely information to the public. Below is factual information about the June 2 wet weather event discharge and additional background on Burlington's wastewater and combined sewer system.

- In early morning of June 2, Burlington's Main Wastewater Treatment Plant released approximately 700,000 gallons of partially disinfected wet weather flow into Lake Champlain.
- Bacterial sample results read at 4 am on Sunday, June 3 showed an *E. coli* concentration of approximately 13,700 cols/100 mL or 2.2 times our wet weather event permit limit.
- Given the lower bacteria concentrations indicating active disinfection, and the fact that the outfall is half a mile into Lake Champlain, the risk to human health is minimal. Furthermore, *E. coli* is not harmful to fish or other aquatic biota.
- In accordance with State Public Notification procedures (Act 86) enacted in 2016, signs were posted at beaches and Lake access points within 1 mile of the outfall as a precaution as of 3 pm June 3rd. Required parties, including surrounding towns, the Burlington city health officer, nearby water treatment facilities and the Department of Parks, Recreation and Waterfront, as well as local media sources, have been notified within 12 hours of discovery in accordance with our permit and Department of Environmental Conservation procedures.
- At this point, it does not appear that the issue was caused by mechanical failure or operator error. Rather the plant has been battling on-going issues in the biological portions of the treatment system for the last few years, which can impact the ability for downstream settling processes to work fully. This in combination with the impact of elevated flows due to the storm event resulted in there being more solids than usual in the outflow which caused the disinfection agent to not work fully.
- We believe the cause of this issue is due to biological processes being negatively influenced by fluctuations in the strength of incoming wastewater due to production

cycles at our industrial customer facilities. Like a garden or compost pile, the biological system can only handle fluctuations of nutrient inputs of a certain magnitude. When the nutrient levels change substantially and/or are not in balance the biological systems do not function properly and issues such as poor settling can occur. The Wastewater team procured an external wastewater process expert starting in mid-April to assist in addressing this issue and this work will continue. In addition, our team has increased sampling to diagnose and correct these issues to bring the system back into balance.

- Additionally, Burlington Water Resources is working to develop a robust industrial pre-treatment program which will require industrial customers to better manage the strength of their discharge to our system and the Division continues to implement stormwater retrofits which reduce inputs of stormwater to our combined sewer system. In May we sent our Wastewater Facilities Manager to a multi-day conference on industrial pre-treatment programs.

Additional Background on Main Wastewater Plant Combined Sewer/Wet Weather Treatment System

Burlington's Main Plant Sewer Collection system is a combined sewer system, where one pipe receives both sanitary and stormwater flow and carries it to the wastewater treatment plant. During significant storm events this combined sewer system *can* cause un-treated and un-disinfected combined sewer overflows (CSOs) from the collection system, but the vast majority of flows from storm events travel to the treatment plant.

During the last Main Plant wastewater system upgrade in 1994 the City eliminated a number of untreated and un-disinfected CSOs by upgrading the plant's treatment processes to provide the full enhanced secondary level treatment train (primary clarification, with biological nutrient removal, secondary clarification and disinfection) for small storm events (those with intensities < 0.15 in/hour).

The 1994 upgrade also maximized treatment for storm events that exceeded that small storm threshold (intensities> 0.15 in/hour) by providing vortex screening of solids and disinfection for flows up to an additional 100 million gallons and rough screening and disinfection of <u>all</u> wet weather events in order to meet water quality standards in the Lake.

At the same time, the outfall for Burlington's Main Plant (previously located 100' on-shore) was redesigned to lay on the Lake bottom, extend 2600' off shore (out past the breakwater) and to include 1000' of diffusers (evenly spaced holes) to minimize the "point source" nature of a typical wastewater outfall. Our dry weather *E. coli* limit is 77 cols/100 mL (and we typically release < 4 cols/100 mL) cols, and our *E. coli* limit for wet weather events is 6160 cols/100 mL for wet weather events. During typical wet weather operations, we operate well below that limit.

Given the challenges that increasing frequency of intense storms presents for our collection system and treatment plant, Burlington Water Resources is actively pursuing projects and additional planning to remove stormwater from the combined sewer system. Recent and upcoming projects include the King Street infiltration system, the Park/Myrtle infiltration system and the series of bio-retention system planned as part of the St. Paul and Main Street Great Streets and City Hall Park projects. Significant stormwater reduction opportunities have also been identified for future implementation as part of the City's Integrated Water Quality Planning Project as well.

Since the April disinfection incident, which was caused by a mechanical failure, we have done a complete risk review of the chemical feed system valves to ensure that other similar valves have been replaced.

The Department of Public Works team is committed to the stewardship of our precious water resources. We take this incident very seriously and will be taking the follow additional steps 1) complete investigation to confirm the root causes 2) advancing implementation of a pre-treatment program for our industrial and high strength waste customers 3) evaluating whether any additional measures or procedures can be implemented to lessen the likelihood of this occurring in the future.

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